

CLAIMS

1. A network switch for receiving and forwarding data packets that include header data containing address information, comprising:

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(a) a look-up engine disposed to perform a look-up in a database so as to obtain for each packet in a succession of packets respective resultant data which comprises forwarding data for the packet;

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(b) a store; and

(c) a network processor for processing data in said store;

wherein said switch:

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(i) determines whether intervention of the network processor in respect of said packet is required;

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(ii) in the event that such intervention is not required provides said resultant data for said packet;

(iii) in the event that said intervention is required causes storage of said resultant data in said store;

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(iv) allows said processor to process said resultant data to provide processed resultant data; and

(v) provides said resultant data for said packet after the completion of the processing of said resultant data by said network processor.

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2. A network switch according to claim 1 wherein said processor modifies said resultant data.

3. A network switch according to claim 1 further comprising:

at least one memory for at least header data of received data packets; and

means for reading out header data of a packet from said memory for use by said look-up engine, said memory receiving for said packet said resultant data.

4. A network switch according to claim 3 and further comprising a control system which prevents forwarding of a data packet until said resultant data has been stored in the memory for said data packet.

5. A network switch according to claim 4 wherein said memory comprises a multiplicity of FIFO stores and wherein said control system provides an identification of a FIFO store as 'busy' on read-out of header information from that FIFO store to the look-up engine and cancels said identification when the look-up engine provides the resultant data in the absence of intervention by the network processor and cancels the identification when intervention by the network process is completed.

6. A network switch according to claim 5 wherein and further comprising a link engine which causes read-out of a packet from a FIFO when a respective look-up has been performed and the said identification has been cancelled.

7. A network switch according to claim 5 wherein each FIFO store is associated with a head pointer indicating a location into which data can be written to the FIFO store, a tail pointer indicating a location from which data can be read out of the FIFO store and a look-up pointer indicating the progression of look-up in respect of packet data in the FIFO store.

8. A network switch for receiving and forwarding data packets that include header data containing address information and including:

5 (a) a database containing entries relating address information to forwarding data for packets;

10 (b) a look-up engine disposed to perform a look-up in said database so as to obtain for each packet in a succession of packets respective resultant data which includes forwarding data for the packet; and

(c) a network processor;

15 wherein said look-up engine determines whether intervention of the network processor in respect of said packet is required and if so stores said resultant data for use by said network processor and performs a look-up in said database in respect of another packet while said network process performs processing in respect of said resultant data of said packet.

20 9. A network switch according to claim 8 wherein said network processor modifies said resultant data.

25 10. A network switch according to claim 9 and further comprising at least one memory for at least header data of received data packets; means for reading out header data of a packet from said memory for use by said look-up engine, said memory receiving for said packet said resultant data; and a control system which prevents forwarding of a data packet until said resultant data has been stored in the memory for said data packet.